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ABSTRACT

During the 1988-89 school year, 55 Writing to Read (WTR) labs were installed in Kentucky, Virginia, and West Virginia elementary schools, as the result of a partnership between the Appalachian Regional Commission and the IBM Corporation. This report evaluates the WTR program implemented in 13 southern West Virginia rural schools with poor, declining populations. WTR is a computer-based instructional system designed to develop the writing and reading skills of kindergarten and first-grade students. Evaluation consisted of a standardized writing sample and spelling test, as well as teacher questionnaires. Thirteen comparable elementary schools from the same school districts served as comparisons. At both the kindergarten and first-grade levels, WTR students did significantly better than comparison groups on the writing sample, and scored higher on the spelling test. The fear that the WTR program's use of phonemic spelling might have a negative effect on students' spelling skills seems unwarranted. Although both WTR and comparison teachers liked their own reading programs and judged them to be effective, more WTR teachers than comparisons thought their students were reading and writing better than those in previous classes, and reported positive feedback from parents. Administrators reported positive attitudes and felt that the program also improved school relationships with parents and community. Contributing to the program's success were ongoing inservice training and an active support system for teachers. Appendices contain the teacher questionnaire and procedures for collecting student writing samples. (SV)

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Implementation of the Writing to Read Program in 13 Rural Elementary Schools in Southern West Virginia: A Two-Year Evaluation

Final Report

Appalachia Educational Laboratory
P.O. Box 1348 • Charleston, West Virginia 25325

October 24, 1990

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IMPLEMENTATION OF THE WRITING TO READ PROGRAM IN 13 RURAL ELEMENTARY SCHOOLS IN SOUTHERN WEST VIRGINIA: A TWO-YEAR EVALUATION

FINAL REPORT

ARC Contract No. 88-128 CO-9970B-88-I-302-0902

Submitted to:

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October 24, 1990

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Larry Deeds, Summers County coordinator
Larry Lane, McDowell County coordinator
Judy McCoy, Mingo County coordinator
Danny Plumley, Lincoln County coordinator
Loretta Rose, Wyoming County co-coordinator

- Robert D. Childers

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INTRODUCTION

The ARC/IMB Writing to Read (WTR) project is the result of a new public/private partnership between the Appalachian Regional Commission (ARC) and the International Business Machine (IBM) Corporation. A total of 55 Writing to Read labs were installed in elementary schools in Kentucky, Virginia, and West Virginia during the 1988-89 school year. The computer hardware for the labs was donated by IBM, while ARC contributed the software and auxiliary materials. The Appalachia Educational Laboratory (AEL), under contract with ARC, was responsible for assisting with the site selection and implementation of the Writing to Read project in 13 elementary schools in southern West Virginia.

Writing to Read

Writing to Read is a computer-based instructional system designed to develop the writing and reading skills of kindergarten and first-grade students. It was developed by IBM and Dr. John Henry Martin and is designed to teach the students how to write anything they can say and read anything they can write.

According to program developers, the WTR system helps students:

- understand how letters form words and words form sentences that express thoughts and ideas;
- recognize and create letters of the alphabet through a variety of multisensory experiences;
- learn to use a consistent phonemic spelling system;
- discover the joy of language;
- develop their ability to express ideas and to manipulate the English language;

- learn to use the computer as a surrogate guide and tutor; and
- learn to use the computer as a word processor, thereby enabling them to apply concepts they learn more quickly and easily.

The program is provided in a separate room called the Writing to Read center or lab. It is recommended that the center be staffed by a fulltime aide. Students and teacher move from their classroom to the center for one hour each day. Each center is organized around five required learning stations as outlined in the teacher's manual (Martin, 1986).

The Computer station is one of the major learning stations in the WTR center. The lab aide directs the students' activities at this station. The students proceed through a series of ten instructional cycles that teach some basic vocabulary words using a phonemic spelling system. The computer "voice" introduces students to the skills being taught in the instructional cycles. There is a good deal of repetition in the computer activities.

A second learning station is the Work Journal Station. The work journals are designed to provide the students with additional opportunities to learn the material presented in the ten instructional cycles. Some of the pages in the work journal are designed to be completed in conjunction with an audiotape. The major activity is to practice writing the cycle words in a variety of formats.

A third learning station is the Writing/Typing Station. In one area of this station, the students write their stories by hand, using pencils, markers, crayons, chalk, etc. In the other areas of the station, students type their stories on a computer using a word processing system. Students are encouraged to read what they have written.

The Listening Library Station is the fourth required learning station. Here the students listen to stories recorded at a slow pace while following the written text in a corresponding book. This provides the students the opportunity to match speech with written language.

The fifth station is the Make Words Station. A variety of activities is arranged to have children practice making letters, words, and sentences. They also match letters and sounds using manipulatives and appropriate alphabet materials.

Project Sites

The ARC/IBM Writing to Read project in West Virginia involved Lincoln, McDowell, Mingo, Summers, and Wyoming counties. All five counties may be characterized as predominantly rural, economically distressed, and declining in population. During the past ten years, the decline in student population in these school districts has ranged between 8.2 percent and 31.5 percent. At the same time, the number of applications for a free or reduced lunch has steadily grown. In these districts during the 1989-90 school year, the percentage of the student population that made application for free or reduced lunches ranged from 43 to 86 percent.

A total of 920 students from 13 elementary schools in these districts participated in the Writing to Read program during the first year (1988-89) and 1,057 participated in the second year (1989-90). The increase in the second year was the result of four schools not implementing the program at the first-grade level during the first year. Table 1 lists the number of students enrolled in the WTR program by year, grade, and school site.

Table 1

Number of Kindergarten and First-Grade Students Enrolled in the Writing to Read Program by Year and Sites

Sites/Schools	1988-89 Kindergarten Students	1988-89 First Grade Students	1989-1990 Kindergarten Students	1989-1990 First Grade Students
Lincoln County				
Atenville	44	33	22	32
Hamlin	55	0	69	60
McDowell County				
Bartley	30	24	19	25
Panther	38	47	35	42
War	56	61	45	54
Mingo County				
Delbarton	55	53	52	58
Gilbert	49	60	49	49
Lenore	34	39	40	40
Summers County				
Bellepoint	27	20	19	21
Jumping Branch	25	18	16	20
Wyoming County				
Berlin McKinney	63	0	60	65
Huff	50	0	34	47
Mullens	39	0	45	39
TOTAL	565	355	505	552

Equipment and Materials

Initially, each center received the following equipment and materials:

- 9 IBM PC Jr computers,
- 1 IBM printer,
- 6 cassette players,
- 18 headsets with adapters,

- set of listening library books and accompanying cassette tapes, and
- set of work journals for each kindergarten and first-grade student in the school.

The school districts were responsible for equipment maintenance and for providing individual story diskettes and paper for the printer. Some schools did purchase additional printers, cassette players, and computer games.

Equipment Problems

Two major equipment problems were encountered during implementation.

First, a number of the computers and printers did not function properly when received. It should be noted that the computers and printers donated by IBM were used equipment. Several schools reported that the equipment had not been boxed properly for shipment. Therefore, a number of the computers had to be repaired or replaced. IBM did repair or replace all equipment that did not function properly upon arrival. Problems that arose later became the responsibility of the school system.

The second problem was related to the headsets. The headsets provided were new but were not designed to withstand handling by kindergarten and first-grade students. The original headsets were replaced with new Califone Headsets 2924-C, which proved to be satisfactory.

Equipment Maintenance

The school superintendents chose not to purchase IBM service contracts, since their Regional Education Service Agencies (RESAs) already employed computer technicians who could service the equipment. This seems to have worked very well. Availability of parts for the PC Jr computers has created some delays.

Writing to Read Lab Aides

The Writing to Read program was designed to utilize a fulltime lab aide who would be responsible for the lab or center and would assist each teacher as they brought their class into the lab. Participating school superintendents assigned the kindergarten aide to serve in this role. However, first-grade teachers did not have classroom aides. Thus, schools needed to employ an aide or train volunteers in order to implement the Writing to Read program at the first-grade level.

To assist in implementation at the first-grade level, a proposal was prepared by the Appalachia Educational Laboratory and funded by ARC to provide six lab aides to the school systems on an 80/20 percent matching basis. Mingo County agreed to employ a lab aide for three participating schools. The other school districts chose not to take advantage of this opportunity for two reasons. First, by the time the proposal was funded, they had already trained parent volunteers or had decided to implement the Writing to Read program only at the kindergarten level for the first year. Second, the superintendents knew the number of service personnel already exceeded the state allotment.

During the second year, the program was implemented at both the kindergarten and the first-grade levels at all of the project sites. Mingo County continued to employ the lab aides by utilizing local funds. The other sites utilized volunteers to staff the program.

Training

More than 50 administrators, teachers, and aides from the five districts attended the initial three-day training sessions conducted in

August and September 1988 by IBM in Lexington, Kentucky. Each district coordinator, upon completion of training, received a complete set of video training tapes and teacher manuals. The coordinators were then responsible for training those administrators, teachers, and aides who were unable to attend the initial training in Lexington. Parent volunteers were trained at the individual schools.

During the second semester, a one-day Writing to Read refresher course was provided for all program personnel. The training session was held on a Saturday and more than 60 administrators, teachers, and aides attended. Participant responses to the session were very positive.

Prior to the beginning of the second year, a two-day training session had to be conducted due to the large number of "new" personnel in the program. One of the district coordinators retired, five of the 13 school principals were new, and a number of teachers and aides were new. Another one-day Writing to Read refresher course was provided for all program personnel during the second year of operation.

Since the personnel turnover rate was small at the end of the second year, a review and sharing session was held for all personnel in September 1990. It should be noted that much of the inservice training program would not have been possible without the financial and personnel resources provided by Forward in the Fifth, IBM, and AEL.

In addition, several other types of inservice training activities were offered throughout the two years. These included:

- Several district coordinators arranged for some of their personnel to visit other operating Writing to Read programs.
- District coordinators met regularly with AEL's project director for planning and sharing.

- District coordinators were available to assist individual teachers or aides.
- Some WTR district coordinators prepared and distributed special newsletters to all program personnel.
- AEL's project director conducted several on-site visits to each of the 13 Writing to Read centers.

EVALUATION

The AEL evaluation design was modeled after that used in the study that Educational Testing Service (ETS) conducted for IBM (Murphy & Appel, 1984). The standardized writing sample and spelling test developed by ETS, as well as the teacher questionnaires, were utilized (a standardized reading test, while very desirable, was not included due to its cost). A special features of the AEL design was that during the first year (1988-89), the evaluation focused on the kindergarten students and then followed them up as first graders during the second year (1989-90).

To serve as a comparison group, 13 elementary schools from the same school districts were selected. These schools did not utilize the Writing to Read program but were comparable to those involved in the program in terms of (a) past standardized achievement test scores, (b) socioeconomic status as measured by the percentage of free and reduced lunches, and (c) years of experience of the kindergarten and first-grade teachers.

Assessment of Student Writing

The writing assessment was conducted by the classroom teacher under the supervision of the WTR district coordinators or their representatives. A uniform standard procedure developed by Educational Testing Service (Murphy & Appel, 1984) for assessing writing skills of kindergarten and first-grade children was used (see Appendix A). The teachers followed a printed scenario and each child wrote on a common topic--"One day I found a magic hat." The stories were not edited by the children or teacher.

They were collected by the district coordinator and submitted "as is" for scoring.

All writing samples were scored by a single reading supervisor skilled in utilizing the six-point scale developed by Educational Testing Service (see Appendix B). While kindergartners and first graders both used a six-point scale, naturally the standards for first graders were higher. The criteria for judging the writing emphasized the ideas presented and the development and expression of those ideas. Penmanship, spelling, and punctuation were not considered. Papers that were blank (BL) or undecipherable (UN) were given a score of 0.

First Year Results--As Kindergartners (1988-89)

While all of the Writing to Read kindergarten students participated in the assessment process, a 20-percent sample was drawn for statistical analysis. In the non-Writing to Read classrooms, the district coordinator identified every fifth student to take the same tests as the Writing to Read students (N = 107). This systematic method uses a set interval from a population list--in this case, the classroom register of students. This procedure is acceptable, since the population list itself is essentially randomized (Lutz, 1983). This same systematic method (every fifth student on the classroom register) was used with the Writing to Read classes (N = 107).

Figure 1 represents graphically the mean writing scores for the Writing to Read and the non-Writing to Read kindergarten students by school districts. In all sites, the Writing to Read students did better than their counterparts.

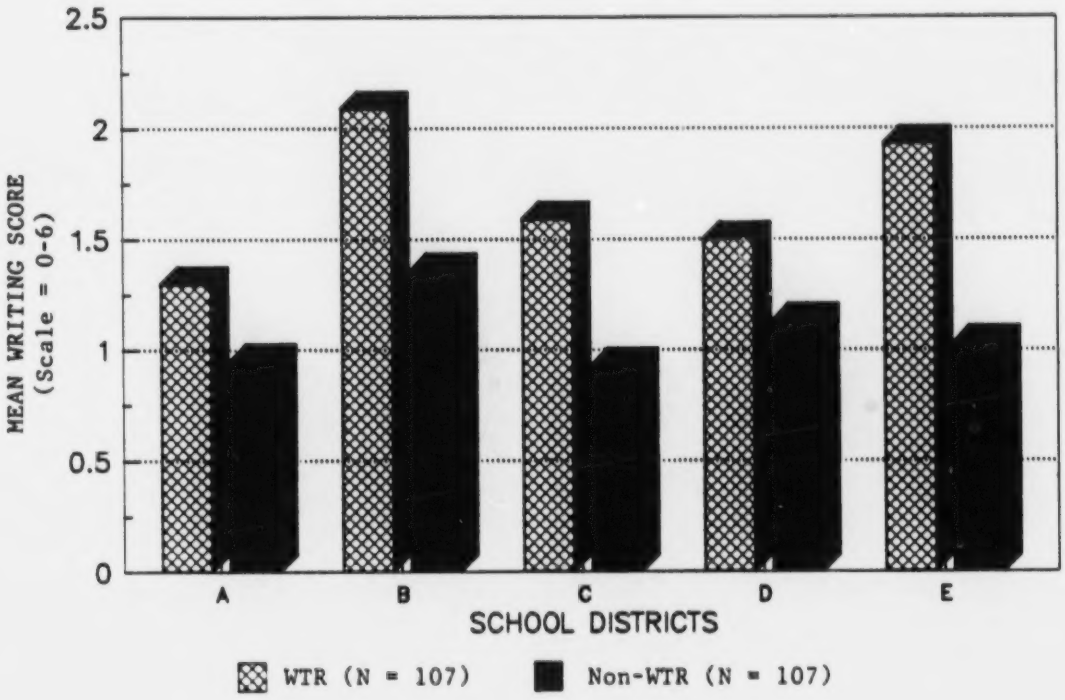

Figure 1

Kindergarten Writing Samples by Sites, 1988-89

A t-test was calculated to determine the probability that the difference between the grand mean of the Writing to Read students and that of the non-Writing to Read students was a real difference rather than a "chance" difference. As shown in Table 2, the difference between the groups was significant at the .001 level, indicating that such a difference could occur by chance only once in a thousand.

Table 2

Comparison of Writing Sample of Writing to Read Kindergartners and Non-Writing to Read Kindergartners (1988-89)

	N	M	SD	t	Sig. Level
Writing to Read	107	1.73	1.20		
Non-Writing to Read	107	1.07	0.65	5.00	.001

To see if the differences between the Writing to Read students and the non-Writing to Read students were significant at the school district level, a two-tail t-test for small independent samples was calculated. The results are presented in Table 3. The difference was found to be significant at four of the five sites. The level of significance was .01 at District E and at the .05 level at Districts A, B, and C. The difference at District D, while favoring the Writing to Read students, was not significant.

Table 3

Comparison of Writing Sample of Writing to Read Kindergartners and Non-Writing to Read Kindergartners by Site (1988-89)

	N	M	SD	t	Sig. Level
District A					
WTR	20	1.30	0.65		
Non-WTR	20	0.95	0.22	2.29	0.05
District B					
WTR	22	2.09	1.44		
Non-WTR	22	1.36	0.79	2.08	0.05

Table 3 (cont'd.)

	N	M	SD	t	Sig. Level
District C					
WTR	27	1.59	0.97		
Non-WTR	27	0.93	0.38	2.43	0.05
District D					
WTR	8	1.50	1.41		
Non-WTR	8	1.13	1.55	0.50	NS
District E					
WTR	30	1.93	1.36		
Non-WTR	30	1.03	0.49	3.41	0.01

Second Year Results--As First Graders (1989-90)

The writing assessment procedures during the second year were the same, except all Writing to Read and non-Writing to Read first graders were tested rather than drawing a sample for statistical analysis, as was done during the first year as kindergartners.

The mean writing scores for the Writing to Read and non-Writing to Read first graders by school districts are presented graphically in Figure 2.

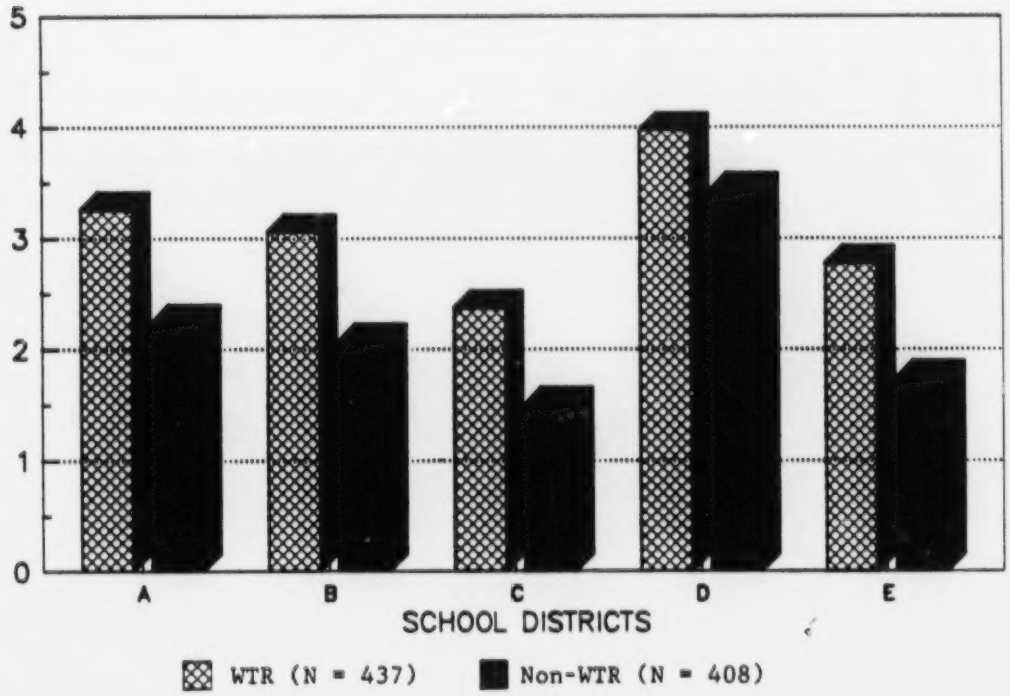

Figure 2

First Graders' Writing Samples by Sites, 1989-90

A directional t-test was calculated to determine the probability that the difference between the grand mean of the Writing to Read first graders and that of the non-Writing to Read first graders was a real difference. As shown in Table 4, the difference was significant at the .001 level.

Table 4

Comparison of Writing Sample of Writing to Read First Graders and Non-Writing to Read First Graders (1989-90)

	N	M	SD	t	Probability
Writing to Read	437	2.94	1.29		
Non-Writing to Read	408	2.05	1.35	9.76	.001

A directional t-test was calculated to determine if the differences between Writing to Read and non-Writing to Read first graders were significant at the school district level. The data are presented in Table 5. The differences were significant at the .001 level in Districts A, B, C, and E and at the .05 level in District D.

Table 5

Comparison of Writing Sample of Writing to Read First Graders and Non-Writing to Read First Graders by Site (1989-90)

	N	M	SD	t	Sig. Level
District A					
WTR	87	3.26	.83		
Non-WTR	89	2.24	1.10	7.03	0.001
District B					
WTR	100	3.06	1.29		
Non-WTR	66	2.08	1.11	5.24	0.001
District C					
WTR	107	2.37	1.29		
Non-WTR	92	1.55	0.94	5.17	0.001

Table 5 (cont'd.)

	N	M	SD	t	Sig. Level
District D					
WTR	36	3.97	1.44		
Non-WTR	47	3.43	1.53	1.67	0.05
District E					
WTR	107	2.79	1.28		
Non-WTR	114	1.74	1.45	5.71	0.001

It should be noted that direct comparisons cannot be made between the writing scores at the kindergarten level and at the first-grade level. Each grade level has a different standard for each of the six-point grading scales.

Assessment of Student Spelling

"Does spelling phonetically in the Writing to Read program have a negative effect on the students' spelling skills?" is a question often expressed by parents and teachers. Therefore, as part of the student achievement assessment, a short spelling test was administered to students in the Writing to Read program and to students in the non-Writing to Read comparison group. The spelling test at the kindergarten and first-grade levels consisted of the same ten words used by Educational Testing Service in its national evaluation of the Writing to Read instructional system.

Since no textbook spelling series was available for the kindergarten level, the staff at Educational Testing Service reviewed the basic words

for first graders in four spelling series. The ten spelling words for the kindergarten level test were selected from a list of 45 words common across the series and the Dolch list. A similar procedure was followed for first graders. In order to include a number of words with more than one syllable, it became necessary to select some words from the level 2 series.

The spelling test was administered by the classroom teachers under the supervision of the WTR district coordinator. Teachers were asked to read the words to their students and have the students write the words on paper.

The teachers were instructed to read slowly each of ten sentences, twice, like this: "He is six feet tall. Write the word feet. I'll say it again. He is six feet tall. Write the word feet." The words and sentences used at each level were:

A. Kindergarten

1. He is six feet tall.
2. We took a ride on the bus.
3. She made sandwiches for lunch.
4. The girl was tired.
5. I cut my finger.
6. Going to the circus was fun.
7. We saw a big dog.
8. I have a bike at home.
9. The boy said "yes."
10. I can write my name.

B. First Grade

1. He is six feet tall.
2. We took a ride on the bus.
3. Mary wishes she could swim.
4. Going to the circus was fun.
5. This is a good book.
6. They have big car.
7. The bird is in the tree.
8. He did not say anything.
9. She is very pretty.
10. We went to the circus together.

The spelling tests were scored by either classroom teacher or the district coordinator. A child's score was the number of words spelled correctly (0-10). For scoring purposes, only "book" spelling was considered correct. No credit was given for phonemic spelling.

First Year Results--As Kindergartners (1988-89)

The spelling test was difficult for Writing to Read and non-Writing to Read kindergartners alike. Children enrolled in the Writing to Read program averaged spelling three of the ten words correctly, while non-Writing to Read children averaged spelling only one word correctly. Figure 3 provides a graphic comparison of the mean spelling scores of the Writing to Read students and the non-Writing to Read students in the individual school districts. In each site, the Writing to Read students did better than the non-Writing to Read students in spelling.

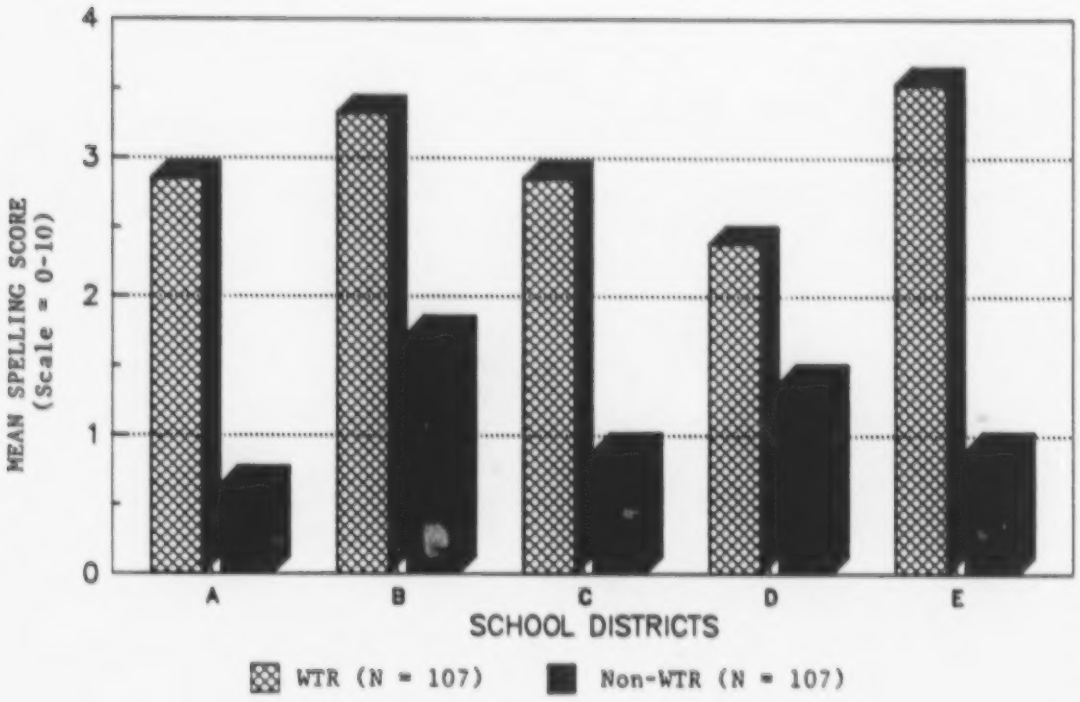

Figure 3

Kindergarten Spelling Test by Sites, 1988-89

A two-tail t-test was calculated to ascertain if the grand spelling mean of the Writing to Read group was significantly different from the grand spelling mean of the non-Writing to Read group. The results are presented in Table 6. An examination of Table 5 reveals a t-value of 3.56, which is significant at the .001 level.

Table 6

Comparison of Spelling Scores of Writing to Read Kindergartners and Non-Writing to Read Kindergartners (1988-89)

	N	M	SD	t	Sig. Level
Writing to Read	107	3.10	2.50		
Non-Writing to Read	107	1.06	1.46	3.56	0.001

To determine if the differences between the spelling scores of the Writing to Read students and non-Writing to Read students were significant at the individual sites, a t-test for small independent samples was calculated for each site. These data are presented in Table 7. The differences were significant at the .001 level in three sites (Districts A, C, and E) and significant at the .05 level at one other site (District B). The difference at District D favors the Writing to Read students but was not significant.

Table 7

Comparison of Spelling Scores of Writing to Read Kindergartners and Non-Writing to Read Kindergartners by Sites (1988-89)

	N	M	SD	t	Sig. Level
District A					
WTR	20	2.85	1.98		
Non-WTR	20	0.65	1.08	4.36	0.001
District B					
WTR	22	3.32	2.93		
Non-WTR	22	1.73	1.98	2.11	0.05

Table 7 (cont'd.)

	N	M	SD	t	Sig. Level
District C					
WTR	27	2.85	1.81		
Non-WTR	27	0.89	1.22	4.67	0.001
District D					
WTR	8	2.38	1.69		
Non-WTR	8	1.38	1.60	1.22	NS
District E					
WTR	30	3.53	3.14		
Non-WTR	30	0.90	1.30	4.24	0.001

Second Year Results--As First Graders (1989-90)

Writing to Read first graders did better on the spelling test than the non-Writing to Read first graders in all five school districts, as Figure 4 depicts. The average first grader in the Writing to Read program spelled six of the ten spelling words correctly, while non-Writing to Read first graders averaged only five.

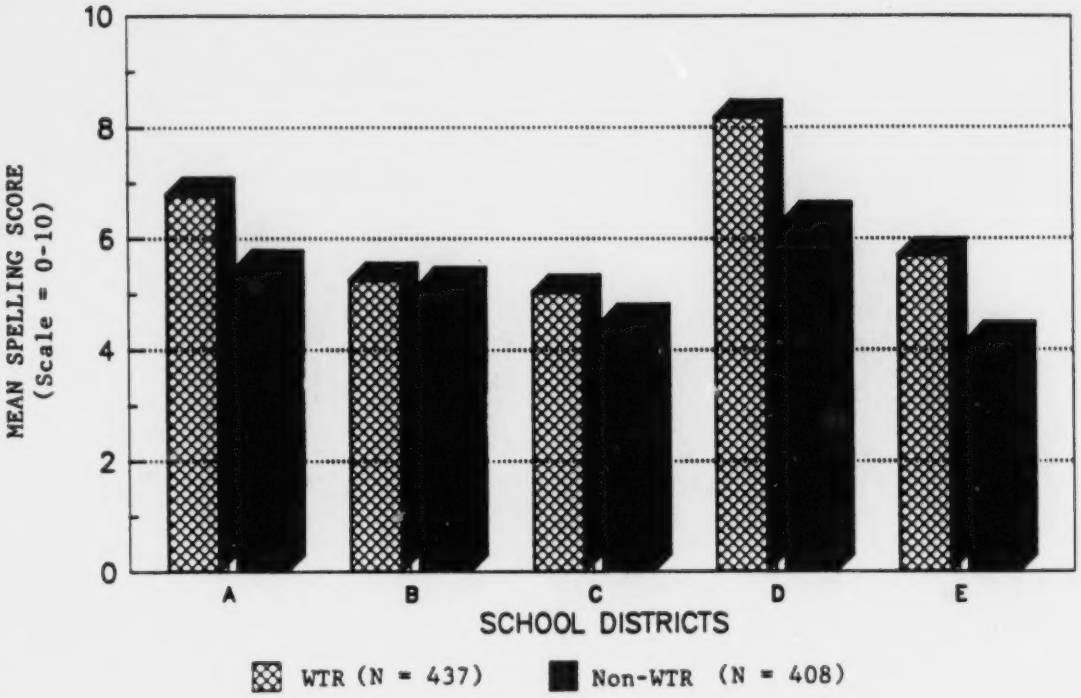

Figure 4

First Grade Spelling Test Scores by Sites, 1989-90

To determine if the grand spelling mean of the Writing to Read first graders was significantly different from the grand spelling mean of the non-Writing to Read first graders, a directional t-test was calculated. The data are presented in Table 8. An examination of Table 7 shows a t-value of 5.02, which is significant at the 0.001 level.

Table 8

Comparison of Spelling Scores of Writing to Read First Graders and Non-Writing to Read First Graders (1989-90)

	N	M	SD	t	Probability
Writing to Read	437	5.85	2.73		
Non-Writing to Read	408	4.95	2.50	5.02	0.001

A t-test was calculated to determine if the mean spelling score differences between the WTR first graders and the non-WTR first graders were significant at the school district level. The results are presented in Table 9. The difference was significant at the 0.001 level in Districts A, D, and E, but not significant in Districts B and C.

Table 9

Comparison of Spelling Scores of Writing to Read First Graders and Non-Writing to Read First Graders by Sites (1989-90)

	N	M	SD	t	Probability
District A					
WTR	87	6.78	2.42		
Non-WTR	89	5.47	2.70	3.39	0.001
District B					
WTR	100	5.25	2.57		
Non-WTR	66	5.17	2.28	0.22	NS
District C					
WTR	107	5.03	2.92		
Non-WTR	92	4.51	2.50	1.35	NS
District D					
WTR	36	8.17	1.38		
Non-WTR	47	6.34	2.67	4.03	0.001
District E					
WTR	107	5.69	2.64		
Non-WTR	114	4.18	2.02	4.74	0.001

Teachers' Survey

A critical component in the evaluation of any innovative instructional program is the attitude of the teachers who are expected to implement the program. In May 1989, questionnaires were distributed to 30

kindergarten teachers in the Writing to Read program and 26 kindergarten teachers in the non-Writing to Read schools. Responses were received from all 56 kindergarten teachers.

The teacher questionnaires were developed by Educational Testing Service for use in their 1984 national evaluation of the Writing to Read program (Appendix C). Except for references to the respective reading programs, the questionnaires asked identical questions of Writing to Read teachers and non-Writing to Read teachers.

Table 9 presents a comparison of selected responses of kindergarten Writing to Read teachers and kindergarten non-Writing to Read teachers (1988-89). Both groups "liked" their reading programs and judged them to be "effective." Approximately three-fourths of the Writing to Read teachers (77%) thought their students were reading and writing "better" than students in previous years, while most of the non-Writing to Read teachers thought their students were reading (63%) and writing (91%) about the "same" as students in previous years. This may be the result of Writing to Read teachers spending "more" time in reading (85%) and writing (100%) than in previous years, whereas the non-Writing to Read kindergarten teachers said they were spending about the "same" amount of time in reading (83%) and writing (81%) as in previous years. Eighty-nine percent of the Writing to Read teachers reported "positive" feedback from parents concerning their child's reading program, compared to 55 percent of non-Writing to Read teachers.

Table 10

Selected Responses from Teacher Questionnaire:
Kindergarten Writing to Read Teachers and
Kindergarten Non-Writing to Read Teachers
1988-1989

	Writing to Read	Non-Writing to Read
How do you feel about Writing to Read/your reading program?		
Like it very much	60%	8%
Like it	30%	80%
Not sure	10%	4%
Dislike it	0%	8%
Dislike it very much	0%	0%
How would you rate its overall effectiveness?		
Very effective	50%	12%
Effective	40%	88%
Not sure	10%	0%
Ineffective	0%	0%
Very Ineffective	0%	0%
How do you think the progress in READING of MOST of your students compares to the progress in READING of your students in previous years?		
Are reading better than students in previous classes	77%	8%
Are reading about the same as students in previous classes	19%	63%
Are not reading as well as students in previous classes	4%	25%
Have no opinion	0%	4%
How do you think the progress in WRITING of MOST of your students compares to the progress in WRITING of your students in previous years?		
Are writing better than students in previous classes	77%	0%
Are writing about the same as students in previous classes	14%	91%
Are not writing as well as students in previous classes	0%	9%
Have no opinion	9%	0%

Table 10 (cont'd.)

	Writing to Read	Non-Writing to Read
How does the amount of time you spend on reading compare with the amount you spent in previous years?		
Am spending more time on reading than in previous years	85%	17%
Am spending about the same amount of time as in previous years	15%	83%
Am spending less time on reading than in previous years	0%	0%
How does the amount of time you spend on writing compare with the amount you spent in previous years? (Original rather than handwriting)		
Am spending more time on writing than in previous years	100%	14%
Am spending about the same amount of time as in previous years	0%	81%
Am spending less time on writing than in previous years	0%	5%
What kind of feedback have you had from parents about Writing to Read/your reading program?		
Very positive	39%	17%
Positive	50%	38%
Have had no feedback	11%	42%
Negative	0%	3%
Very negative	0%	0%
Activities at which "a typical child in your classroom spends a great deal of time."		
Reading aloud	27%	24%
Reading silently	10%	8%
Creative writing	17%	4%
Developing a sight vocabulary	57%	48%
Learning word meanings	23%	36%
Phonic/structural analysis	83%	72%
Penmanship	77%	64%

Table 10 presents a comparison of selected responses of the Writing to Read first-grade teachers (N = 27) and the non-Writing to Read first-grade teachers (N = 25). Approximately two-thirds of both groups reported that they "liked" their reading programs and judged them to be "effective."

Thirty-seven percent of the WTR teachers compared to 26 percent of the non-WTR teachers thought their students were reading "better" than students in previous classes. At the same time, 54 percent of the non-WTR teachers compared to 44 percent of the WTR teachers said they were spending "more" time on reading than in previous years.

Approximately two-thirds (63%) of the WTR teachers reported their students were writing "better" than previous classes, compared to only nine percent of the non-WTR teachers. These results may be explained in that 70 percent of the WTR teachers, compared to only 29 percent of the non-WTR teachers, were spending "more" time on writing than in previous years.

Twice as many of the non-WTR teachers as WTR teachers (48% to 23%) said they had not received any feedback from parents regarding their reading program. Nearly twice as many WTR teachers as non-WTR teachers (67% to 39%) reported receiving "positive" feedback from parents.

Table 11

Selected Responses from Teacher Questionnaire:
First Grade Writing to Read Teachers and
First Grade Non-Writing to Read Teachers
1989-1990

	WTR Teachers	Non-WTR Teachers
How do you feel about Writing to Read/your reading program?		
Like it very much	22%	24%
Like it	45%	40%
Not sure	19%	16%
Dislike it	7%	20%
Dislike it very much	7%	0%
How would you rate its overall effectiveness?		
Very effective	19%	20%
Effective	48%	48%
Not sure	22%	24%
Ineffective	11%	8%
Very Ineffective	0%	0%
How do you think the progress in READING of MOST of your students compares to the progress in READING of your students in previous years?		
Are reading better than students in previous classes	37%	26%
Are reading about the same as students in previous classes	52%	61%
Are not reading as well as students in previous classes	7%	13%
Have no opinion	4%	0%
How do you think the progress in WRITING of MOST of your students compares to the progress in WRITING of your students in previous years?		
Are writing better than students in previous classes	63%	9%
Are writing about the same as students in previous classes	22%	78%
Are not writing as well as students in previous classes	8%	13%
Have no opinion	7%	0%

Table 11 (cont'd.)

	WTR Teachers	Non-WTR Teachers
How does the amount of time you spend on reading compare with the amount you spent in previous years?		
Am spending more time on reading than in previous years	44%	54%
Am spending about the same amount of time as in previous years	52%	46%
Am spending less time on reading than in previous years	4%	0%
How does the amount of time you spend on writing compare with the amount you spent in previous years? (Original rather than handwriting)		
Am spending more time on writing than in previous years	70%	29%
Am spending about the same amount of time as in previous years	30%	54%
Am spending less time on writing than in previous years	0%	17%
What kind of feedback have you had from parents about Writing to Read/your reading program?		
Very positive	19%	9%
Positive	48%	30%
Have had no feedback	23%	48%
Negative	10%	9%
Very negative	0%	4%
Activities at which "a typical child in your classroom spends a great deal of time."		
Reading aloud	70%	71%
Reading silently	30%	29%
Creative writing	44%	13%
Developing a sight vocabulary	44%	54%
Learning word meanings	33%	29%
Phonic/structural analysis	74%	92%
Penmanship	38%	42%

Summary

In implementing the Writing to Read program, the schools were provided an ongoing inservice program and an active support system. With the exceptions of utilizing parent volunteers instead of paid lab aides, the schools followed the program model as prescribed by its author, John Henry Martin.

Although the evaluation did not include a standardized reading test, there was an assessment of the students' achievement in writing and spelling. On the writing sample, the Writing to Read students did significantly better than the non-Writing to Read students at both the kindergarten and first-grade levels. The fear that the introduction of phonemic spelling may have a negative effect on the students' spelling skills seems unwarranted. In fact, the Writing to Read students at both the kindergarten and first-grade levels scored higher on the spelling tests than their non-Writing to Read counterparts.

Writing to Read teachers and non-Writing to Read teachers alike reported that they "liked" their reading program and judged them to be "effective." However, more Writing to Read teachers than non-Writing to Read teachers (1) thought their students were reading and writing "better" than students in previous classes, and (2) reported that they had received "positive" feedback from parents.

CONCLUSIONS AND RECOMMENDATIONS

Although there were some minor problems during implementation, one must conclude that the ARC/IBM Writing to Read project was a success in the participating sites in southern West Virginia. The following conclusions and recommendations are based on the data presented, plus the author's on-site observations and interactions with district coordinators, administrators, teachers, parents, and students over the past two years.

Conclusions

Conclusion #1: Successful implementation of the Writing to Read instructional system requires an ongoing inservice program.

The initial three-day training session provided by IBM in Lexington, Kentucky, received high marks from the teachers in West Virginia. In general, teachers who received the initial training in Lexington appeared to be more confident in implementing the program than those teachers trained at the local school level who utilized only the video training tapes.

Regardless how effective the initial training may be, there is a need for additional assistance in the implementation process. During a one-day Writing to Read refresher session conducted in the spring of 1989, a teacher commented, "I really appreciate this inservice--I was beginning to feel bogged down, so this was definitely a battery charger."

Prior to beginning the second year, a centralized two-day training session for new people was required due to the large number of personnel changes at the project sites. For example, one of the five district coordinators had retired, five of the 13 principals were new, and several

of the teachers were new. Fortunately, this high turnover rate did not exist at the end of the second year. However, with a no-cost contract extension from ARC and the collaborative efforts of AEL and IBM, a one-day refresher program was provided in September 1990 for approximately 60 teachers and administrators.

Conclusion #2: Several schools were able to implement the Writing to Read program successfully by utilizing volunteers in place of the paid lab aide.

The key is identifying and recruiting dependable volunteers. Several of the schools had very dependable volunteers. Some worked all day, every day. Other schools reported problems in getting dependable volunteers. There is no doubt that it would be better if every school had a fulltime, paid lab aide. However, only three of the 13 schools were able to provide these services. During the first year of the project, these schools utilized matching funds from ARC but continued the aide during the second year with local funds.

Conclusion #3: Teachers made a real effort to follow the prescribed Writing to Read model.

The ten vital practices of the Writing to Read model are:

1. Teacher prepares daily assignment sheet.
2. Students participate daily at these stations:
   - computer,
   - work journal, and
   - typing/writing.
3. Students listen to stories every day.
4. Students record progress daily.
5. Teacher completes class profile sheet weekly.
6. Students work with a partner.

7. Students compose words or stories every day.

8. Management plan must allow independent movement from station to station.

9. Students operate and care for equipment and materials.

10. Students take completed work journals home to parents.

Conclusion #4: Students enjoyed the Writing to Read lab and had little difficulty in utilizing the equipment and materials at the various stations.

A number of teachers reported situations where a child did not feel well enough to attend class but parents would bring them to school for the Writing to Read class. When the children were asked what they liked best about the lab, the most common response was "everything." A number of school principals have reported that their second- and third-grade students are asking their teachers, "Why can't we go to the writing lab?" Some schools have made the lab available for second graders to write when not in use.

The biggest surprise to teachers and parents alike was how quickly the students learned to use the computers. One teacher confessed, "I just didn't believe kindergarten students could do it."

Conclusion #5: The Writing to Read program had a positive impact on students' achievement in writing and spelling.

Kindergarten students in the Writing to Read program achieved significantly higher scores on a writing sample and spelling test than kindergarten students in non-Writing to Read classes during the first year of the project. As first graders, these Writing to Read students again achieved significantly higher scores on the writing and spelling tests than their non-Writing to Read counterparts. Although the

assessment was based on posttest data only, the fact that the differences in the writing and spelling scores were significant at the .001 level lends support to the above conclusion.

Conclusion #6: Both Writing to Read and non-Writing to Read teachers' responses to Writing to Read/your reading program were positive.

Most Writing to Read and non-Writing to Read teachers alike said they "liked" their reading program and judged them to be "effective." While there was little or no difference between the WTR teachers and the non-WTR teachers, the kindergarten teachers in both groups were more positive than the first-grade teachers. For example, approximately 90 percent of the kindergarten teachers in both groups "liked" their reading program and judged it to be "effective" (Table 9), compared to only about two-thirds of the first-grade teachers (Table 10). The reason for this difference is not clear.

Conclusion #7: Parents' reactions to the Writing to Read program were positive.

The evaluation plan did not include a survey of parents' attitudes concerning the Writing to Read program. However, 89 percent of the teachers in the Writing to Read schools during the first year reported receiving positive responses from the parents of their students. All 13 school principals reported a positive response by the parents. A number of parents expressed surprise at how well their children could sound out words. They also thought their children's experiences with the computer would better prepare them for the future.

The degree of parental involvement in the Writing to Read program varied from school to school and from classroom to classroom within a

school. More involvement appeared on the part of parents in those classrooms where the teacher felt comfortable with the new program and where the school had a history of parent participation.

Conclusion #8: The principals of the participating elementary schools responded positively to the Writing to Read program.

Some typical responses from the principals, when asked about the Writing to Read program, were:

- "I would rate the program Very Good! The teachers have done an excellent job. The program inspires creative writing at an early age."
- "Our students have achieved higher grades in their phonics by learning the sounds on the computer."
- "The program has been very successful and a welcome asset to our school's educational capacity."
- "On a scale from one to ten, I would give the program a nine."
- "It is probably the best program I have seen introduced to kindergarten and first-grade students."
- "Due to a turnover of a number of new personnel in our school, the program was not as successful as it could have been."
- "The program has made a positive impact on the curriculum at our school."
- "Writing to Read is very effective in bridging the gap between home and school."
- "The program has helped our children to work together while learning to become more independent."

Conclusion #9: Many of the participating schools and school systems utilized the Writing to Read program to develop better school-community relations.

Every school reported conducting some type of orientation activity for the parents of their students. Sometimes this was a special program

for the parents' organization and, in some schools, a special open house. Newsletters and newspaper articles with pictures and children's stories were published throughout the five counties. One such newspaper story was awarded first place in the statewide feature article competition.

In addition to displaying the students' stories in the classroom and hallways, students' stories were displayed in numerous locations in the community. In one community, a local restaurant displayed the students' stories under the glass on their dining tables. Another school displayed their children's work in a nearby shopping mall, while another made a display at the local banks, each with an appropriate explanation. Television coverage and presentations to civic and community organizations were utilized by some schools. These activities resulted in some businesses and organizations making special contributions to the schools for the Writing to Read program and/or for purchasing additional equipment for the labs.

Conclusion #10: District coordinators believe their participation in the project has been beneficial to them, the students, and their school systems.

Below are the district coordinators' responses when asked about the benefits of participating in the ARC/IBM Writing to Read project:

- "Participation in the ARC/IBM Writing to Read project has allowed students access to technology that would not have been possible otherwise. As a result of the project, lower-achieving students are seeing a connection between spoken and written language at an earlier age. Students are writing earlier in their formal schooling than ever before, and spelling attempts are evolving in a developmental way rather quickly. Students have increased self-confidence in their writing and reading because their efforts are accepted and encouraged. This has been possible partially because of changed attitudes of teachers toward emergent writing and reading efforts."

- "By participating in the WTR program, the students involved are learning writing skills that will benefit them throughout their life. The ability to communicate through writing is a skill that will enable the learner to achieve success in their educational experience and beyond.

  "Instead of writing being a chore, students enjoy and look forward to their time in the WTR lab, and this enthusiasm for writing will hopefully continue through their years in school.

  "The success of the WTR program in three of our elementary schools has spread throughout the county, and now many principals are inquiring how they can go about getting a WTR lab for their school."

- "The WTR program has been a valuable asset to our two schools that are participating and to the county. The kids that participate each year are showing definite educational growth in reading and writing skills and I tend to believe that our evaluation will evidence this."

- "I have benefited personally through contacts made with other district coordinators, the state coordinator, the ARC, and the AEL to the extent that I have become more effective in my job. If I do not know the answer to a particular technical problem, I know that I know someone who can help me.

  "Our school system has benefited by exposure to this every effective program. We have already expanded the program to Kimball Elementary and plan to expand to others as funds become available. Even if we cannot expand in the future, we have learned the importance of the link between reading and writing that will serve us well in implementing our basal program."

- "The most obvious benefit of the program is to the students and in their abilities to read and write. By personal observation, talking to teachers and principals, and looking at the data collected via the annual evaluation, it certainly appears that the students involved in WTR are progressing better than the students not in WTR (as determined with control group testing). This is as hoped and expected. The students are reading 'words' earlier and writing sooner (and with greater clarity) than other students in non-WTR classes.

  "A secondary benefit comes from the good parent-school relationships that are developing and from the positive PR that the program is bringing to the schools and school system. These cannot be measured but are certainly important."

Conclusion #11: District coordinators value the role played by the statewide project coordinator.

When asked about the role of the state coordinator, the district coordinators provided the following responses:

- "...having a state-wide coordinator...has been invaluable. He has supported, advised, observed, assisted, coordinated, communicated, facilitated, and in general been the catalyst and leader the program needed (and still needs) for total success."

- "The state coordinator...has been a great asset to the WTR program by providing guidance, training sessions, on-site visitations with suggestions for improvement, helpful materials, coordinating a state evaluation report, providing program dissemination to the media and by just keeping everything in focus for a successful program."

- "The role of the state coordinator has been one of keeping us focused on the project and keeping us motivated. He has done this through inservice where teachers, aides and district coordinators were involved. He has done this through periodic meetings between district coordinators to enable us to exchange ideas and problem solve. He has made periodic visits to each project site to help keep us on task. He has helped foster some good public relations through positive news articles.... He has acted as an enabler when problems arose allowing us and/or encouraging us to utilize the resources available at AEL when possible. Most importantly, we knew that if we did have a problem he was only a phone call away."

- "Having a state coordinator for the WTR program has been quite beneficial to me. This is my first year as the WTR coordinator for Mingo County; and without Dr. Childers' help, my job would have been quite difficult.

  "As most WTR coordinators, we wear many hats, and Dr. Childers has enabled us to keep the programs running smoothly. The WTR teachers and aides appreciate his visits and welcome his advice and guidance."

- "Having a state coordinator has provided support necessary for a newly established program. The coordination keeps everyone moving toward a common goal. It would be difficult to maintain communication and consistency with other counties without the services of a coordinator. The state

coordinator has kept all of us informed about new developments with the program and support materials. Also, having a state coordinator has made it possible to have a project-wide evaluation as opposed to five independent, diverse evaluations.

"On a more personal note, we feel Dr. Childers has proven to be more than just a state coordinator. His personal visits to the centers have encouraged teachers and county coordinators. He has always been very supportive in all of our efforts associated with the ARC/IBM project. He has had helpful suggestions for questions and concerns as they have arisen. We feel we have greatly benefitted in many areas from our association with Dr. Childers.

Recommendations

The following recommendations are based upon two years' experience of working with the ARC/IBM Writing to Read project in West Virginia.

Recommendation #1: That each school system utilizing the Writing to Read program provide a training program annually for the "new" personnel involved in the program.

Such a training program should be required of all new teachers, aides, and administrators who have not been formally trained in the program.

Recommendation #2: That an ongoing inservice program for all program personnel be made available by the local school system.

Experience during the past two years has shown that to successfully implement the Writing to Read program, teachers need assistance beyond the initial training. It is important for these teachers to be provided technical assistance as needed, as well as the opportunity to share with others involved in the program.

Recommendation #3: That school systems explore the feasibility of providing the Writing to Read program in self-contained classrooms rather than in separate Writing to Read labs or centers.

As additional computer hardware becomes available for the individual classroom, the possibility of providing Writing to Read in the classroom makes a lot of sense. This would provide the teacher with much more flexibility in planning and scheduling the instructional program.

Recommendation #4: That school principals monitor the Writing to Read program to provide the needed support and to ensure the model is being followed.

In order for principals to assume this responsibility, it is imperative that they become familiar with all aspects of the program. It is impossible for district coordinators, who have numerous other district-wide responsibilities, to provide the assistance that teachers may need.

Recommendation #5: That the evaluation data from the ARC/IBM Writing to Read project be made available to education decisionmakers.

Efforts along these lines have already begun. The 1988-89 report was submitted to the Clearinghouse on Rural Education and Small Schools to be included in the Educational Resources Information Center (ERIC). Also, the evaluation data were included in a paper presented by the state coordinator to the 1990 Annual NREA Rural Education Research Forum in Colorado Springs, Colorado. At the state level, the state coordinator made presentations at the Governor's Basic Skills Conference in Charleston, West Virginia. Participants in this conference are charged with the responsibility of choosing a computer-based program for kindergarten through first grade for their local school system.

Recommendation #6: That a followup study of the students be conducted to determine if the gains made in the program are maintained after leaving the program.

The Appalachia Educational Laboratory has submitted a proposal to ARC for a one-year followup of the students who were in the program. The proposal is under consideration at the present time.

Recommendation #7: That new instructional materials and procedures be developed to maintain the gains made in the Writing to Read program.

Instructional programs specifically designed to build upon the skills learned in the Writing to Read lab are needed. At the same time, Writing to Read labs in small schools sit empty several hours each day. An instructional program coordinated with the Writing to Read labs needs to be developed for grades two and three; otherwise, the gains made may soon be lost.

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APPENDICES

APPENDIX A

Instructions to Teachers for Collecting Writing Samples

Appendix A. Instructions, Directions, and Criteria

Instructions to Teachers for Collecting Writing Samples

- ***Date of assessment.*** Writing samples should be collected near the end of the term and after at least 18 weeks of instruction in WTR and any non-WTR classes.
- ***Materials.*** Pupils should use the pencils that they normally use for writing.
- ***Length of time.*** After you have given the directions and answered questions, the children are to be given 30 minutes to write one copy of their story.
- ***Teacher assistance.*** Once you have read all the directions for writing the story and answered any questions, please do not assist the pupils in writing their stories, spelling words, and so on.
- ***Directions.*** After you have distributed pencils and paper, please tell the children to write their names at the top of their papers. Then read:

  Today you will be writing a story all by yourself. I can't help you but I know you will do the best you can. I'm going to read a little story first. Listen.

  Once upon a time when a little boy and a little girl were walking home from school, they found two magic hats. Because the hats were magic, when they put the hats on they could do anything they wished. They could fly up in the sky; they could be clowns in the circus; they could go to the moon. They could even eat all the ice cream in the world. They had a wonderful time.

  Now...just think what YOU could do if YOU found a magic hat. Let's write a make-believe story about what you would do if you found a magic hat. Remember, you can do or be anything you wish. Start your story like this: One day I found a magic hat.

  [Print the following sentence on the board:]

  One day I found a magic hat.

  [The children should now begin. The children should be encouraged to write and to do the best they can. At the end of 30 minutes, ask the children to turn in their stories.]

APPENDIX B

Writing Stages

APPENDIX C

Teacher Questionnaires

Writing to Read Teacher Questionnaire

Name _____ School _____

1. How many students are in your class? K ____ 1 ____ 2 ____ Other ____

2. How many years of teaching experience have you had, including this year?
   - 1 year or less ____
   - 2 – 4 years ____
   - 5 – 9 years ____
   - 10 – 14 years ____
   - 15 – 19 years ____
   - 20 years or more ____

3. What reading program(s) do you use with Writing to Read? (may list more than one)

   _____

   _____

   _____

4. How long have you been using Writing to Read?
   - This is the first year ____
   - This is the second year ____
   - Used for more than 2 years ____

5. How do you feel about Writing to Read?
   - Like it very much ____
   - Like it ____
   - Not sure ____
   - Dislike it ____
   - Dislike it very much ____

6. How would you rate its overall effectiveness?
   - Very effective ____
   - Effective ____
   - Not sure ____
   - Ineffective ____
   - Very ineffective ____

7. How do you think the progress in *reading* of *most* of your students compares to the progress in *reading* of your students in previous years?
   - Are reading better than students in previous classes ____
   - Are reading about the same as students in previous classes ____
   - Are not reading as well as students in previous classes ____
   - This is my first year teaching at this grade level ____
   - Have no opinion ____

8. How do you think the progress in *writing* of *most* of your students compares to the progress in *writing* of your students in previous years?
   - Are writing better than students in previous classes ____
   - Are writing about the same as students in previous classes ____
   - Are not writing as well as students in previous classes ____
   - This is my first year teaching at this grade level ____
   - Have no opinion ____

9. How does the amount of time you spend on reading compare with the amount you spent in previous years?

Am spending more time on reading than in previous years	____
Am spending about the same amount of time as in previous years	____
Am spending less time on reading than in previous years	____
Not applicable (not taught at this grade level)	____
Not applicable (my first year teaching at this grade level)	____

10. How does the amount of time you spend on writing compare with the amount you spent in previous years? (Original rather than handwriting)

Am spending more time on writing than in previous years	____
Am spending about the same amount of time as in previous years	____
Am spending less time on writing than in previous years	____
Not applicable (not taught at this grade level)	____
Not applicable (my first year teaching at this grade level)	____

11. How would you rate the effectiveness of Writing to Read for the following groups of children? (Please check one in each column)

Above Average		Average		Below Average	
Very effective	____	Very effective	____	Very effective	____
Effective	____	Effective	____	Effective	____
Not sure	____	Not sure	____	Not sure	____
Ineffective	____	Ineffective	____	Ineffective	____
Very ineffective	____	Very ineffective	____	Very ineffective	____

12. What kind of feedback have you had from parents about Writing to Read?

Very positive	____
Positive	____
Have had no feedback	____
Negative	____
Very negative	____

How much time does a typical child in your class spend in each of the following types of activities? (in the regular classroom)

Note: Enter 1 if a *great deal* of time
Enter 2 if *some* time
Enter 3 if *little* or *no* time
Enter 4 if not applicable

13. Reading aloud	____
14. Reading silently	____
15. Creative writing	____
16. Developing a sight vocabulary	____
17. Learning word meanings	____
18. Phonic and/or structural analysis	____
19. Penmanship	____

We are interested in your thoughts about the reading and writing skills of the children and the use of computers in education. Please check whether you agree or disagree with the following statements.

	Agree	*Disagree*
20. It is important today that children learn about computers and how to use them.	____	____
21. The children are progressing as well as expected.	____	____
22. Money being spent on computers should be spent on other things.	____	____
23. Too much time is spent on Writing to Read.	____	____
24. Children this age are too young to learn by computers.	____	____
25. I hope our school will continue to use Writing to Read next year.	____	____
26. Our school should emphasize reading skills more than they do at present.	____	____
27. Our school should emphasize writing skills more than they do at present.	____	____

Teacher Questionnaire (non-WTR)

Name _____ School _____

1. How many students are in your class? K:____ 1____ 2____ Other _____

2. How many years of teaching experience have you had, including this year?
   - 1 year or less ____
   - 2 – 4 years ____
   - 5 – 9 years ____
   - 10 – 14 years ____
   - 15 – 19 years ____
   - 20 years or more ____

3. What reading program(s) do you use? (More than one may be listed)

   _____

   _____

   _____

4. How long have you been using the(se) reading program(s)?
   - This is the first year ____
   - This is the second year ____
   - Used for more than 2 years ____

5. How do you feel about your overall reading program?
   - Like it very much ____
   - Like it ____
   - Not sure ____
   - Dislike it ____
   - Dislike it very much ____

6. How would you rate its overall effectiveness?
   - Very effective ____
   - Effective ____
   - Not sure ____
   - Ineffective ____
   - Very ineffective ____

7. How do you think the progress in *reading* of *most* of your students compares to the progress in *reading* of your students in previous years?
   - Are reading better than students in previous classes ____
   - Are reading about the same as students in previous classes ____
   - Are not reading as well as students in previous classes ____
   - This is my first year teaching at this grade level ____
   - Have no opinion ____

8. How do you think the progress in *writing* of *most* of your students compares to the progress in *writing* of your students in previous years?
   - Are writing better than students in previous classes ____
   - Are writing about the same as students in previous classes ____
   - Are not writing as well as students in previous classes ____
   - This is my first year teaching at this grade level ____
   - Have no opinion ____

9. How does the amount of time you spend on reading compare with the amount you spent in previous years?

Am spending more time on reading than in previous years	____
Am spending about the same amount of time as in previous years	____
Am spending less time on reading than in previous years	____
Not applicable (not taught at this grade level)	____
Not applicable (my first year teaching at this grade level)	____

10. How does the amount of time you spend on writing compare with the amount you spent in previous years? (Original rather than handwriting)

Am spending more time on writing than in previous years	____
Am spending about the same amount of time as in previous years	____
Am spending less time on writing than in previous years	____
Not applicable (not taught at this grade level)	____
Not applicable (my first year teaching at this grade level)	____

11. How would you rate the effectiveness of your overall reading program for the following groups of children? (Please check one in each column)

Above Average		Average		Below Average	
Very effective	____	Very effective	____	Very effective	____
Effective	____	Effective	____	Effective	____
Not sure	____	Not sure	____	Not sure	____
Ineffective	____	Ineffective	____	Ineffective	____
Very ineffective	____	Very ineffective	____	Very ineffective	____

12. What kind of feedback have you had from parents about your reading program?

Very positive	____
Positive	____
Have had no feedback	____
Negative	____
Very negative	____

How much time does a typical child in your class spend in each of the following types of activities?

Note: Enter 1 if a *great deal* of time
Enter 2 if *some* time
Enter 3 if *little* or *no* time
Enter 4 if not applicable

13. Reading aloud	____
14. Reading silently	____
15. Creative writing	____
16. Developing a sight vocabulary	____
17. Learning word meanings	____
18. Phonic and/or structural analysis	____
19. Penmanship	____

We are interested in your thoughts about the reading and writing skills of the children and the use of computers in education. Please check whether you agree or disagree with the following statements.

	Agree	*Disagree*
20. It is important today that children learn about computers and how to use them.	____	____
21. The children are progressing as well as expected.	____	____
22. Money being spent on computers should be spent on other things.	____	____
23. Too much time is spent on our reading program.	____	____
24. Children this age are too young to learn by computers.	____	____
25. I hope our school will continue to use the reading program we are using this year.	____	____
26. Our school should emphasize reading skills more than they do at present.	____	____
27. Our school should emphasize writing skills more than they do at present.	____	____